Carsharing

There are currently three companies that offer carsharing in Washington, D.C.: Zipcar, Enterprise, and Car2Go. Zipcar and Enterprise have designated pick-up/drop-off locations, while Car2Go allows users to park anywhere within Washington, D.C., with the exception of the National Mall, Tidal Basin, and Hains Point area. Enterprise currently has one carshare location within the study area, while Zipcar has five. These locations are clustered in two locations: 8th Street NW between D and E Streets NW and at the 9th Street NW/H Street NW intersection. Five of the six carshare locations are in parking garages, and one is on the street. Table 4-26 and figure 4-26 summarizes these locations.

Shuttles

There are a number of shuttles serving the study area that are operated by various Federal Government agencies (GSA 2010). The precise beginning and ending locations of these shuttles is not public information. The following Federal agencies operate shuttles within the study area.

- Department of Homeland Security
- Department of Defense
- Department of Education
- Department of Interior
- Department of Justice
- Department of Transportation
- Environmental Protection Agency
- Federal Communications Commission
- General Services Administration
- Nuclear Regulatory Commission

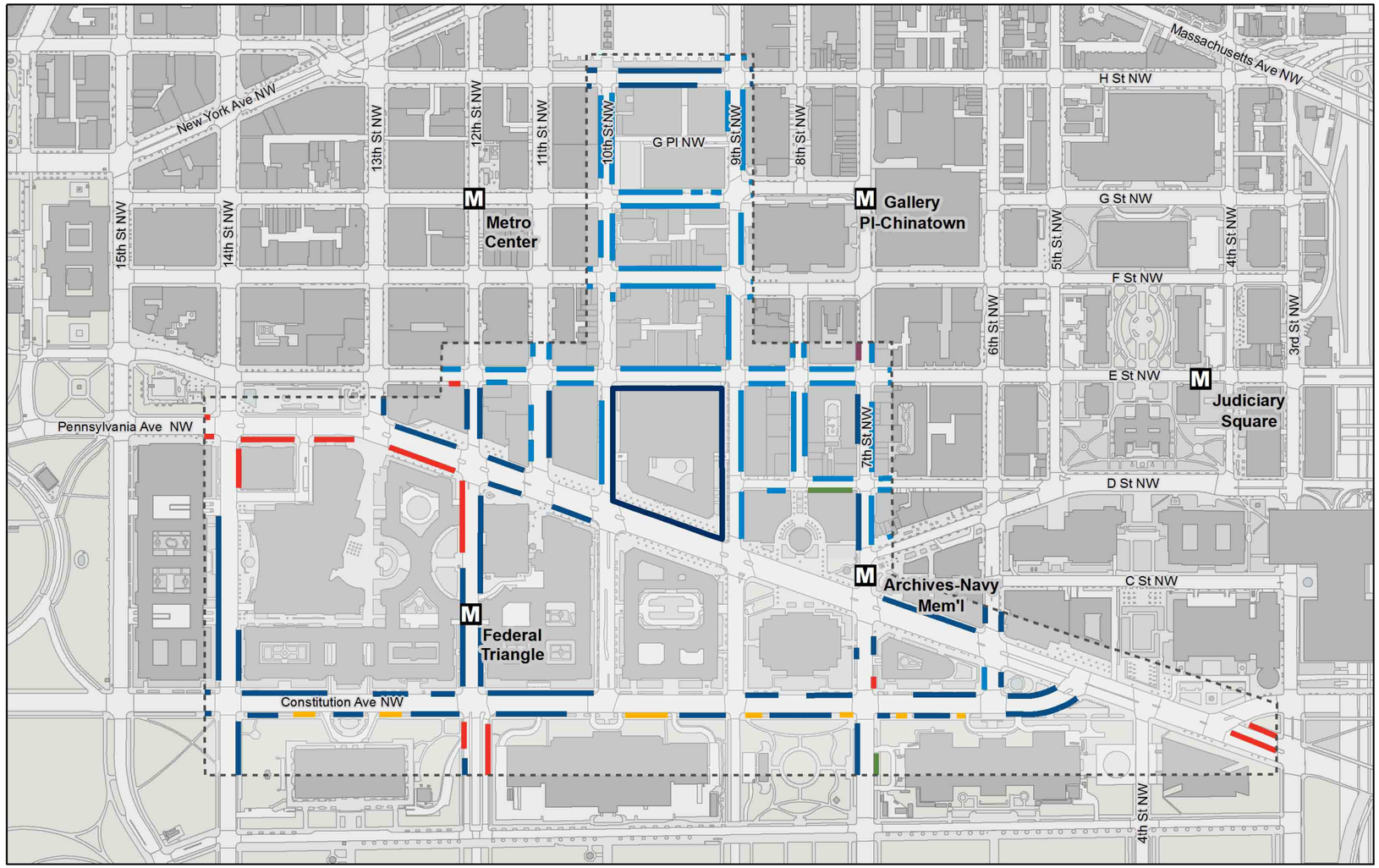
slugline forming 14th St. NW. Photo Courtesy of Dan Macy (© 2009)

Table 4-26: Existing Carshare Locations within the JEH Parcel Study Area

Company	Location	Type
Enterprise	875 D Street NW	Garage
Zipcar	Archives Metro	On street
Zipcar	425 8th Street NW	Garage
Zipcar	875 D Street NW	Garage
Zipcar	8th/H Street NW	Garage
Zipcar	870 9th Street NW (City Center)	Garage

Source: Enterprise CarShare (2015); Zipcar (2015)

Figure 4-27: On-street Parking in the JEH Parcel Study Area



Sources:
ESRI (2013), GSA (2013), DC GIS (2013), Louis Berger (2014)

4.1.9.8 Parking

Parking near the JEH parcel includes limited metered and otherwise restricted on-street parking, as shown in figure 4-27, and structured below-grade parking accessible to the public as shown in figure 4-28. Information about on-street parking in the area was gathered through site visits carried out on July 16 and 17, 2014. Besides the public parking garage in the Ronald Reagan building and International Trade Center, all other nearby garage parking is north of Pennsylvania Avenue NW.

A review of the on-street parking map (figure 4-27) reveals that there is no on-street parking allowed on the JEH parcel block, along several sections of Pennsylvania Avenue NW including between 9th and 10th Streets NW, along 9th and 10th Streets NW between Pennsylvania and Constitution Avenues NW, and on the north side of Constitution Avenue NW between 9th and 10th Streets. Beyond the areas of "no on-street parking" in the immediate vicinity of the JEH building, on-street parking is generally metered and time constrained (typically a 2-hour time limit) with the closest on-street parking located to the north, east and west of the JEH building. On-street parking is limited to non-peak hours along Pennsylvania Avenue NW; H Street NW; 7th, 12th, and 14th Streets NW; and Constitution Avenue NW, as well as one side of the street on 13th, 11th, and 6th Streets NW in the study area. Reserved parking for government or Smithsonian officials and specific zone permit holders is concentrated along Pennsylvania Avenue NW and one block of E Street NW between 12th and 15th Streets NW, on two sections of 12th Street NW, a small portion of 14th Street near Pennsylvania Avenue NW, a small portion of 7th Street NW near Constitution Avenue NW, and on a small portion of Pennsylvania Avenue NW east of its intersection with Constitution Avenue NW. Food vendor on-street parking is also available along the south side of Constitution Avenue NW. Some sections of the study area have different AM and PM on-street parking situations, as shown in figure 4-27.

In addition to the on-street parking areas, the areas along the west side of 10th Street NW and the east side of 9th Street NW between Pennsylvania Avenue NW are reserved for Metrobus parking and tour bus parking, respectively. The east side of 14th Street in front of the Ronald Reagan building is also designated as a bus stop area with no street parking. Shuttle pick-up and drop-off was observed on July 16, 2014, on the north side of Constitution Avenue NW between 9th and 10th Streets NW. A few loading zones are also demarcated in the study area, including one along the east side of 10th Street NW between E and F Streets NW.

4.1.9.9 Truck Access

Currently, trucks accessing the JEH building enter through a shared vehicular entrance on 10th Street NW. Trucks seeking access to the building are examined more thoroughly than standard personal vehicles.

JEH PARKING

- Parking near the JEH parcel includes limited metered and otherwise restricted on-street parking, and structured below-grade parking accessible to the public. However, there is no on-street parking allowed on the JEH parcel block, along several sections of streets surrounding the JEH parcel.
- In addition to on-street parking, areas along 10th Street NW (west side) and 9th Street NW (east side) between Pennsylvania Avenue NW are reserved for Metrobus parking and tour bus parking, respectively.

Figure 4-28: Garage Parking in the JEH Parcel Study Area

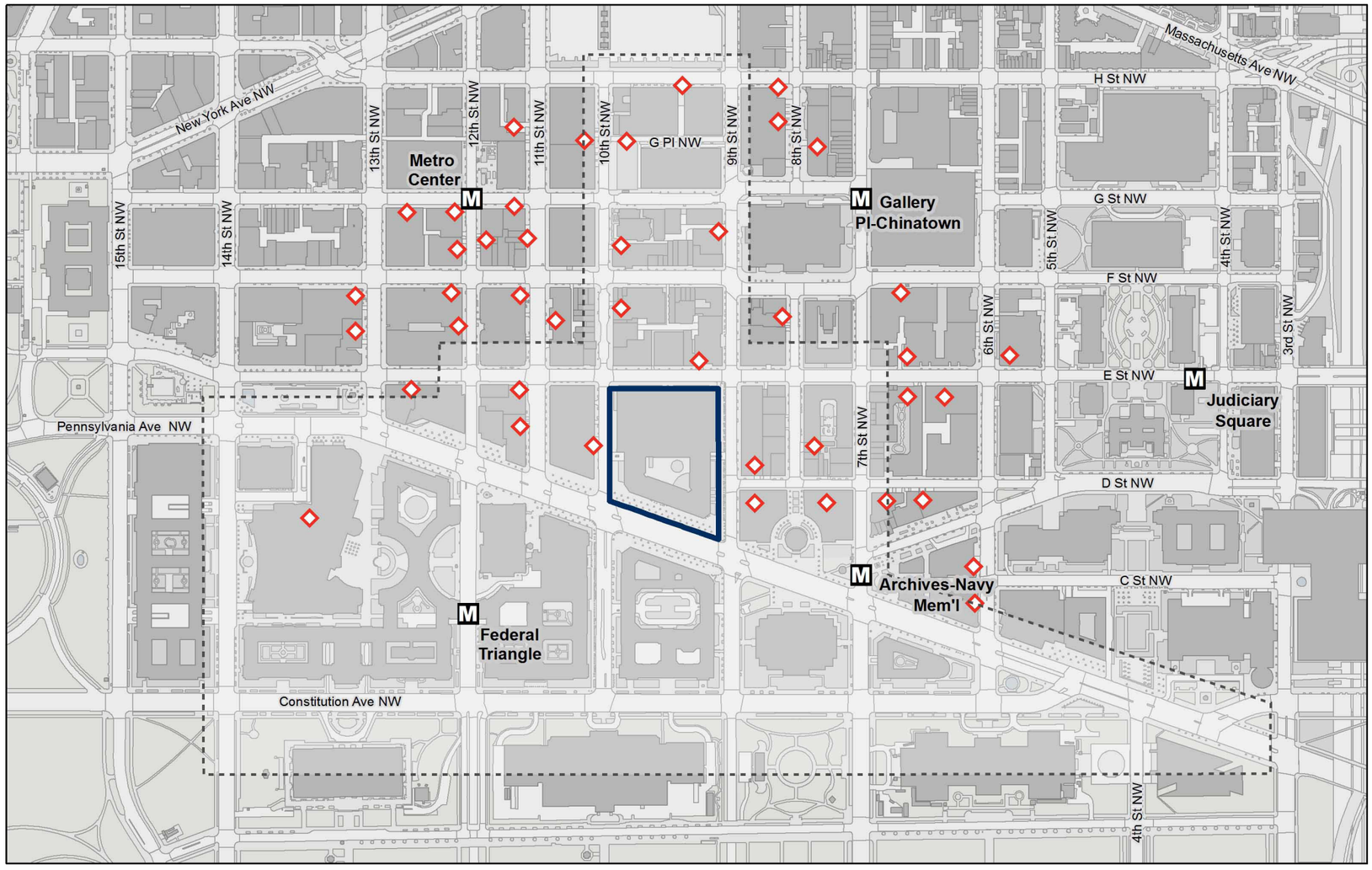
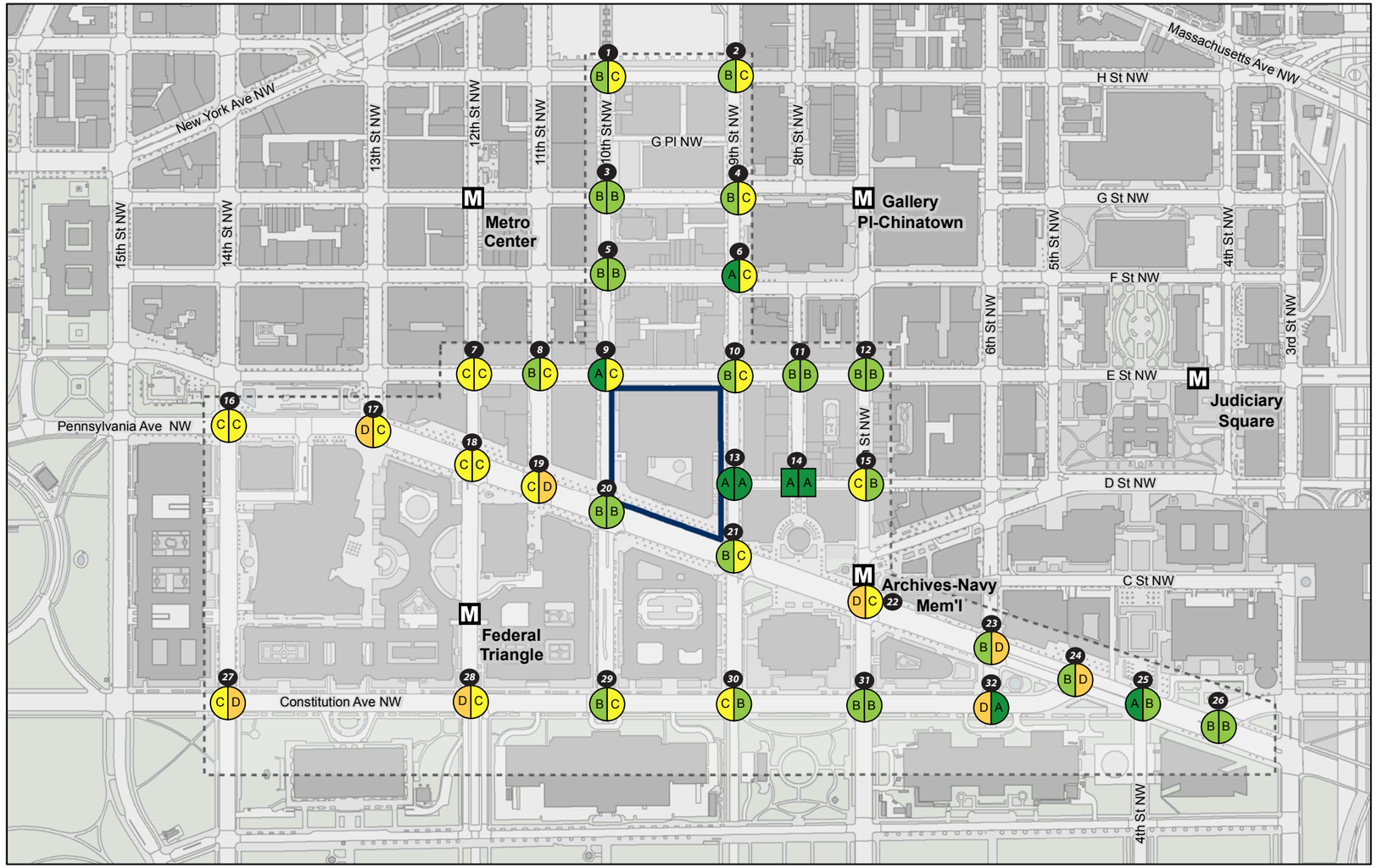


Figure 4-29: JEH Parcel Existing Level of Service Diagram



4.1.9.10 Traffic Analysis

Section 3.10.4.3 explains the analysis, tools, concepts, and definitions for analyzing traffic operations as well as the process used to analyze the study area intersections. The section below provides the traffic analysis results.

Existing Condition Intersection Operations Analysis

Synchro™ was used to calculate the vehicle delay and LOS operation for each study area intersection. Based on the signalized intersection analysis, all of the study intersections operate at overall acceptable conditions during the morning and afternoon peak hours. A total of 10 signalized intersections would experience an unacceptable conditions for one or more turning movements. The JEH TIA (Appendix B) contains a more detailed Existing Condition traffic operations analysis.

Based on the unsignalized intersection analysis, the one unsignalized intersection in the study area (8th Street NW and D Street NW) operates at an acceptable condition during the AM and PM peak hours.

Intersection Operations Analysis

The average LOS for each overall intersection is depicted in figure 4-29 for AM and PM peak hours. Table 4-27 shows the results of the LOS capacity analysis and the intersection vehicle delay for the Existing Condition during the AM and PM peak hours.

Intersection Queuing Analysis

Section 3.10.4.3 introduces the queuing analysis methods used for each study area intersection and which tools were used to obtain the results. Observations during the week of February 9, 2015, in the study area surrounding the existing JEH parcel in downtown Washington, D.C., noted queuing on many blocks during both the AM and PM peak hours. While queuing was noted along many blocks, most of these queues cleared with the signal cycles controlling the adjacent intersections. However, there were a few points with significant queuing that did not clear with the signal cycles. During the AM peak hour, northbound 12th Street operated as a continuous queue from the ramps exiting I-395 and through the Constitution Avenue and Pennsylvania Avenue intersections, dissipating after E Street. During the PM peak hour, southbound 9th Street operated as a continuous queue from G Street through Pennsylvania Avenue to Constitution Avenue.

Based on the Synchro™ and SimTraffic™ analysis, 28 signalized intersections would experience queuing lengths that would exceed the available storage capacity. The remaining intersections in the study area would provide sufficient storage for the anticipated demand. The JEH TIA (Appendix B) contains a more detailed Existing Condition traffic queuing analysis.

Table 4-27: JEH Parcel Existing Condition AM and PM Peak Hour Operations Analysis

#	Intersection	AM Peak Hour Overall			PM Peak Hour Overall		
		Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check
1	10th Street NW & H Street NW	13.3	B	Pass	20.1	C	Pass
2	9th Street NW & H Street NW	19.4	B	Pass	21.6	C	Pass
3	10th Street NW & G Street NW	14.3	B	Pass	18.0	B	Pass
4	9th Street NW & G Street NW	12.6	B	Pass	28.1	C	Pass
5	10th Street NW & F Street NW	12.2	B	Pass	17.6	B	Pass
6	9th Street NW & F Street NW	9.5	A	Pass	21.9	C	Pass
7	12th Street NW & E Street NW	20.9	C	Pass	25.7	C	Pass
8	11th Street NW & E Street NW	14.6	B	Pass	25.6	C	Pass
9	10th Street NW & E Street NW	8.7	A	Pass	23.5	C	Pass
10	9th Street NW & E Street NW	12.2	B	Pass	29.2	C	Pass
11	8th Street NW & E Street NW	13.8	B	Pass	13.5	B	Pass
12	7th Street NW & E Street NW	18.6	B	Pass	18.8	B	Pass
13	9th Street NW & D Street NW	7.7	A	Pass	8.3	A	Pass
14	8th Street NW & D Street NW (AWSC)	8.2	A	Pass	8.4	A	Pass
15	7th Street NW & D Street NW	26.1	C	Pass	16.8	B	Pass
16	14th Street NW & Pennsylvania Avenue NW	27.3	C	Pass	21.7	C	Pass
17	13th Street NW & Pennsylvania Avenue NW	36.0	D	Pass	23.9	C	Pass
18	12th Street NW & Pennsylvania Avenue NW	23.7	C	Pass	20.3	C	Pass
19	11th Street NW & Pennsylvania Avenue NW	27.4	C	Pass	42.6	D	Pass
20	10th Street NW & Pennsylvania Avenue NW	15.2	B	Pass	15.1	B	Pass
21	9th Street NW & Pennsylvania Avenue NW	11.2	B	Pass	21.4	C	Pass
22	7th Street NW & Pennsylvania Avenue NW	38.2	D	Pass	21.9	C	Pass
23	6th Street NW & Pennsylvania Avenue NW	16.5	B	Pass	49.7	D	Pass
24	Constitution (WB) Avenue NW & Pennsylvania Avenue NW	19.8	B	Pass	37.1	D	Pass
25	4th Street NW & Pennsylvania Avenue NW	9.9	A	Pass	14.1	B	Pass
26	Constitution (EB) Avenue NW & Pennsylvania Avenue NW	18.0	B	Pass	17.9	B	Pass
27	14th Street NW & Constitution Avenue NW	24.0	C	Pass	54.7	D	Pass
28	12th Street NW & Constitution Avenue NW	45.0	D	Pass	27.4	C	Pass
29	10th Street NW & Constitution Avenue NW	13.6	B	Pass	24.5	C	Pass
30	9th Street NW & Constitution Avenue NW	26.0	C	Pass	17.8	B	Pass
31	7th Street NW & Constitution Avenue NW	17.6	B	Pass	17.8	B	Pass
32	6th Street NW & Constitution Avenue NW	42.8	D	Pass	6.0	A	Pass

Notes:
AWSC = All-Way STOP-Controlled unsignalized intersection
EB = Eastbound, WB = Westbound
LOS = Level of Service
Delay is Measured in Seconds Per Vehicle.
Red cells denote intersections operating at unacceptable conditions.

Table 4-28: JEH Parcel Two Highest Ozone and $PM_{2.5}$ Values, 2010 to 2014

Monitoring Station		Year				
		2010	2011	2012	2013	2014
#110010043 – 2500 1st Street NW, Washington, D.C.	8-Hour Ozone	0.10/0.088	0.092/0.087	0.098/0.088	0.068/0.066	0.08/0.071
	24-Hour $PM_{2.5}$ – 1	34.1/33.0	30.6/30.2	34.1/31.9	27.3/26.7	30.1/25.8
	24-Hour $PM_{2.5}$ - 2	N/A	N/A	31/23.6	27.6/26	18.7/18.1
#110010042 – Park Service Office 1100 Ohio Drive, Washington, D.C.	24-Hour $PM_{2.5}$	35.1/25.2	30.7/26.9	31.2/27.7	25.7/18.7	17.3/16.8
#110010041 – 420 34th Street NE, Washington, D.C.	8-Hour Ozone	0.096/0.090	0.085/0.084	0.083/0.083	0.071/0.069	N/A
	24-Hour $PM_{2.5}$ – 1	62.2/36.8	28.1/27.8	35.5/33.8	27.6/25.8	30.7/23.8
	24-Hour $PM_{2.5}$ - 2	37.1/25.8	29.2/25.0	N/A	N/A	N/A
#110010050 – 301 Van Buren Street NW, Washington, D.C.	8-Hour Ozone	N/A	N/A	N/A	0.068/0.067	0.082/0.074
#110010025 – Takoma Sc. Piney Branch Road NW, Washington, D.C.	8-Hour Ozone	0.087/0.085	N/A	N/A	N/A	N/A

Source: USEPA (2014a)

JEH GREENHOUSE GAS EMISSIONS AND AIR QUALITY AFFECTED ENVIRONMENT OVERVIEW

- There is broad scientific consensus that humans are changing the chemical composition of earth's atmosphere. Activities, such as fossil fuel combustion, deforestation, and other changes in land use, are resulting in the accumulation of trace GHGs, such as CO_2, in the atmosphere.
- An increase in GHG emissions is said to result in an increase in the earth's average surface temperature, which is commonly referred to as global warming.
- GHG sources at JEH include boilers, chillers, water heaters, daily commuters, and emergency generators. Currently, JEH monitors CO_2e emissions for stationary sources. In FY 2013, JEH emitted 16,002 million metric tons of CO_2e

4.1.10 Air Quality and Greenhouse Gas (GHG) Emissions

The following sections describe the affected environment for air quality and greenhouse gases (GHGs) relevant to the JEH parcel.

4.1.10.1 Greenhouse Gases

GHG emission sources at JEH include boilers, chillers, water heaters, daily commuters, and emergency generators. Currently, the FBI calculates estimated carbon dioxide equivalent (CO_2e) emissions for stationary sources based on fuel consumption and utility use. In FY 2013, JEH emitted an estimated 31,854 metric tons CO_2e from stationary sources and 2,184 metric tons CO_2e from employee commutes (see section 4.2.9 for more information).

4.1.10.2 Air Quality

All sites considered in this EIS are within the same airshed (AQCR 47); all airshed-wide indicators are provided in section 3.11.2.

Existing Ambient Air Quality Concentrations

As discussed in section 3.11.2, the JEH parcel is located in a nonattainment area for the 8 hour ozone (O_3) standard and a maintenance area for particulate matter ($PM_{2.5}$) and carbon monoxide (CO).

Ambient air quality is monitored in the study area by stations meeting USEPA's design criteria for State and Local Air Monitoring Stations and National Air Monitoring Stations. There are five monitoring stations located within Washington, D.C., that measure O_3, $PM_{2.5}$, and meteorological conditions in Washington, D.C. The highest and second highest values recorded at these stations during the period 2010 through 2014 are shown in table 4-33.

Regional Air Quality Index Summary

As described in section 3..1.2.1, USEPA calculates the Air Quality Index (AQI) for five major air pollutants regulated by the Clean Air Act (CAA): ground-level O_3, PM, CO, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2). MWCOG collects data daily to determine air quality for the region and releases it in the form of the AQI.

Table 4-29 displays recent AQI data for Washington, D.C., indicating that an AQI above 300 has not been recorded in Washington, D.C., in the 2010-2014 period.

Table 4-29: AQI Data for Washington, D.C.

Year	AQI - 101 to 150 Unhealthy for Sensitive Groups (days)	AQI - 151 to 200 Unhealthy (days)
2010	18	2
2011	11	0
2012	12	1
2013	0	0
2014	1	0

Source: USEPA (2014b)

UNHEALTHY AIR QUALITY

An AQI value above **151** is considered **unhealthy**. Ah this point, everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.

JEH AIR QUALITY

- Air quality is assessed by regions known as airsheds. The Metropolitan Washington, D.C., area is also known as Air Quality Control Region (AQCR) 47 and includes the JEH parcel as well as all three site alternative locations
- Federal regulations designate AQCRs in violation of the National Ambient Air Quality Standards (NAAQS) as nonattainment areas. According to the severity of the pollution problem, nonattainment areas can be categorized as marginal, moderate, serious, severe, or extreme. USEPA has classified the Metropolitan Washington, D.C., area (AQCR 47), which includes the District of Columbia, Prince George's County, Maryland, and Fairfax County, Virginia, as in marginal nonattainment for the 8-hour ozone NAAQS and in moderate nonattainment for $PM_{2.5}$.
- Climate in the Washington, D.C., Metropolitan area is humid and continental with an average high temperature of 88°F in July and an average low temperature of 25°F in January.

JEH NOISE AFFECTED ENVIRONMENT OVERVIEW

- The JEH parcel exists within a heavily developed urban area, and noise sources in the project area include vehicular traffic along adjacent streets, movement of people, emergency response vehicles, motorcade escorts, construction equipment, and operations from Ronald Reagan Washington National Airport.
- Noise is monitored and measured using the A-weighted decibel (dBA), which is used to express the relative loudness of sounds in the air as perceived by the human ear. Human ability to perceive change in noise levels varies widely from person to person, as do responses to perceived changes. Generally, a 3 dBA change in noise level would be barely perceptible to most listeners, whereas a 10 dBA change is normally perceived as doubling (or halving) of noise levels and is considered a substantial change.
- Because the JEH parcel is located in a highly developed urban area, sensitive noise receptors surround the entirety of the property and include a number of residences, hotels, and parks, most notably the National Mall operated by NPS.

NOISE-SENSITIVE RECEPTORS

Human activities or land uses that may be subject to the stress of significant interference from noise, including residential dwellings, parks, hotels, hospitals, nursing homes, education facilities, churches, and libraries. Sensitive receptors may also include threatened or endangered noise-sensitive biological species.

Hotel Harrington
http://susanreep.com/blog/tag/hotel-harrington/

National Archives Building from Constitution Avenue
Licensed under Public Domain via Commons
https://commons.wikimedia.org/wiki/File:National_Archives_DC_2007s.jpg#/media/File:National_Archives_DC_2007s.jpg

4.1.11 Noise

The JEH parcel exists within a heavily developed urban area. Noise sources within the project area include vehicular traffic along adjacent streets, including E Street NW, 9th Street NW, 10th Street NW, and Pennsylvania Avenue NW. Other sources are human activities associated with an urban environment including the movement of people, emergency response vehicles, motorcade escorts, construction equipment, and operations from Ronald Reagan Washington National Airport. The JEH parcel consists entirely of Federal office space with an underground parking garage, and noise generated is typical of these land uses.

Because the JEH parcel is located in a highly developed urban area, sensitive noise receptors surround the entirety of the property and include a number of residences, hotels, and parks, most notably the National Mall operated by NPS. The closest sensitive receptor is the Lado International Institute, approximately 150 feet to the east of the parcel. Other sensitive noise receptors within 500 feet include multiple residences, Hotel Harrington, Hotel Monaco-Washington, D.C., Courtyard by Marriott-Washington Convention Center, Ford's Theatre, and the National Archives and Records Administration.

Noise regulations applicable to the JEH parcel include Section 5 of the Washington, D.C., Noise Control Act of 1977 (DC Law 2-53, 24 DCR 5293), which permits noise from construction or demolition (excluding pile drivers) activity between 7:00 AM and 7:00 PM on any weekday (DCODAI 1977). Per Section 5 of the Act, noise levels for construction or demolition activities are not permitted to exceed 80 dBA unless through a variance granted by the Mayor of Washington, D.C.

Maximum operational sound levels are established in Washington, D.C's, Municipal Regulations (Chapter 27; Section 2701), which are applicable for the day and night in specific zones defined in the statute, as shown in table 4-38. The JEH parcel is within the commercial or light manufacturing zone, where the maximum permitted daytime noise level is 65 dBA for daytime and 60 dBA for nighttime.